GEOGRAPHIC SCHOOL BULLETINS

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Bradford Washburn

THE YUKON, LIKE THE LITTLE INDIAN, HAS ROOM TO GROW

While the purpose of the new Alaska-Canada highway is to strengthen Alaska's defenses, the road also will bring the world closer to Canada's Indians in Yukon Territory. This playful youth, who goes to an Indian school two miles from Carcross, has dressed up his little brother in a borrowed fur-bordered parka showing a badge of civilization—the zipper. Their home is near Whitehorse, a midpoint on the defense highway (Bulletin No. 1).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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General Headquarters, Washington, D. C.

Alaska-Canada Highway To Open a New "Last Frontier"

THE projected Alaska-Canada defense highway, when war and tires allow, will carry the motorist into the "Spell of the Yukon," in the country praised by Robert W. Service's poems.

By a route not yet decided in detail, the defense highway will connect a series of airfields across the northwest wing of North America. From Fort St. John on the Peace River in British Columbia, the road will run north to Fort Nelson, west to Whitehorse in Yukon Territory, north across the Canada-Alaska frontier to Big Delta on the Tanana River in Alaska, and thence to Fairbanks.

Along this road eventually the vacation-time explorer will find a happy hunting ground within reach of a filling station. The homesteader and dude rancher will discover a new last frontier. The prospector will be lured to blank spots on the map by tales of lost mines. The lumberman will find uncut forests.

Moose, Caribou, and Migrating Ducks Abundant

As he rides into the "deep deathlike valleys" screened by "big dizzy mountains," as Service describes them, the traveler will find game, fish, and berries easily accessible. Here roams the moose, protected from timber wolves by a crisscross of fallen trees where the Indian burned the forest to create a preserve. Here are the "wilds where the caribou call" (illustration, next page). Here is the "bighorn asleep on the hill." Here the Red Man traps the marten, fox, mink, and beaver. Overhead are the migration lanes of the ducks and geese. "Aleap in the river" are grayling and trout; in the lake, whitefish and pike. Growing wild are cranberries, blueberries, currants, raspberries, and mushrooms. There are fields of roses, their thorns a barricade, their perfume filling the air.

Though the climate varies from summer's 90 to winter's extreme 68 below zero, it is not unbearable, because the piercing wind is rare, the atmosphere dry. Yearly rainfall is about 15 inches, and snows are moderate. The summer nights are cool. The Northern Lights, or aurora borealis, glow like forest fires. But summer visitors into the sub-Arctic must face the persistent mosquito.

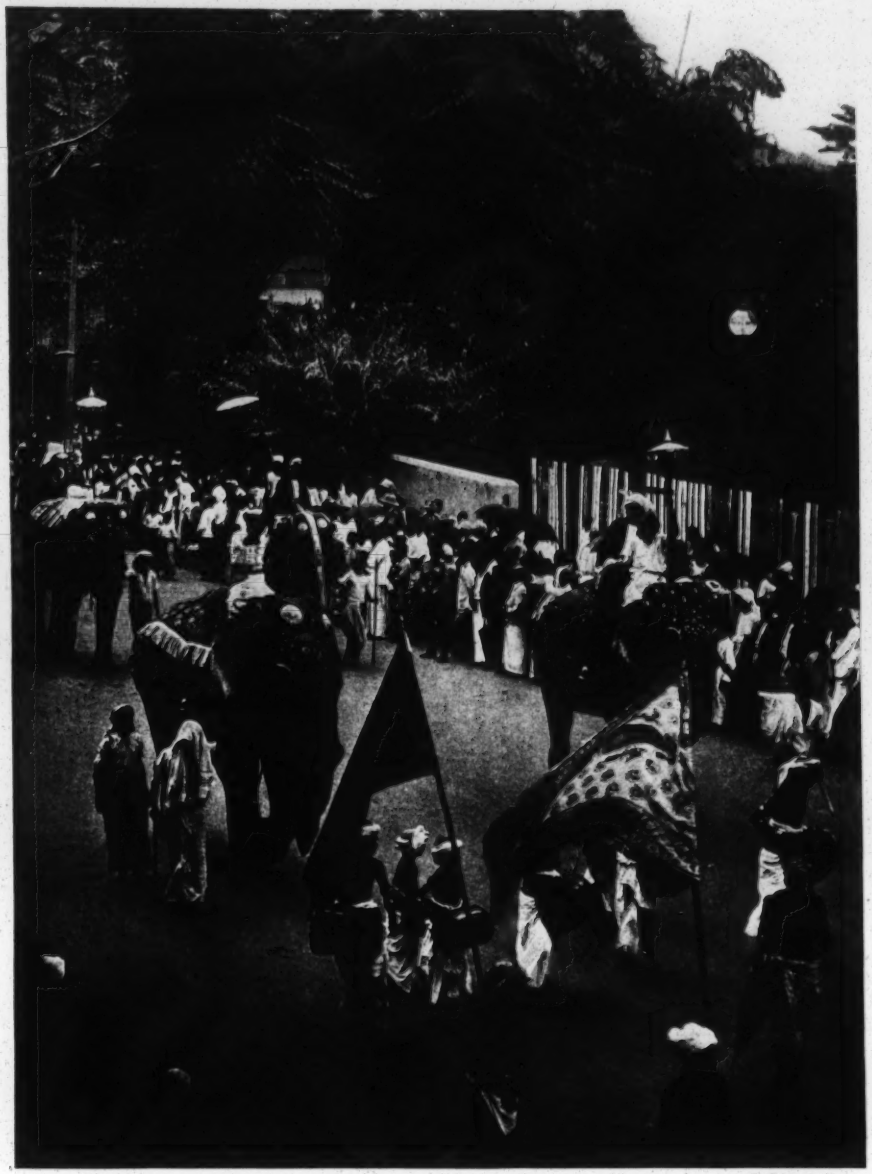
Crosses Yukon Trail That Led to Klondike Gold

North America's own 1,200-mile Burma Road, starting from railhead at Fort St. John, British Columbia, will follow an old fur trail, more recently a tractor route, north to Fort Nelson. The trail crosses unplowed lands of the Minnesota type, suitable for grain and sugar beets. The soil is rich, the long summer days full of sunshine. Lack of transportation has kept this region uncultivated.

To the northwest, the road will cross—perhaps follow—the spectacular Liard River, tributary to the Arctic-bound Mackenzie. Stirring to the imagination are the Liard's Dangerous Whirlpool, Bed Rock Bar, Whirlpool Canyon—upriver hazards. Devil's Portage evokes a vision of the pedestrian boatman. Farther downstream is the 40-mile Grand Canyon of the Liard. Scene of a forgotten tragedy is Rapid of the Drowned. Hell Gate marks the end of navigation perils.

Several verdant valleys—Nature's northern hothouses—lie north of the Liard. They are nurtured by hot springs which melt the snows and are said to keep the valleys green all winter.

Crossing into the Yukon Territory, the new highway will go to Watson Lake, site of an airport too new to appear on many maps. Swinging westward to White-



G. Burroughs

NO CIRCUS PARADE, BUT THE PERAHERA, IS CEYLON'S PEAK OF PAGEANTRY

Although India, the birthplace of Buddha, has only a few Buddhists, the Crown Colony of Ceylon off India's southern tip is a stronghold of Buddhism. Shortly after Buddha's death, according to religious tradition, his 2½-inch right eyetooth was smuggled into Ceylon. For 2400 years the island has honored the sacred tooth with the annual 10-day Perahera celebration, featuring nightly processions through the streets of Kandy by the light of the moon and braziers burning coconut husks; there is one procession by day. Spectators and paraders alike carry big black cotton umbrellas (lower right). Local chieftains in all their jewels ride beruffled elephants beneath small gold-trimmed ceremonial umbrellas. Troupes of turbaned dancers, men only, march to the rhythm of hand-beaten drums (Bulletin No. 2).

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Ceylon, Where Japanese Threaten World's Tea Chest

AFTER occupying the Andaman Islands, Japan's next step against India was an attack on peaceful, rich Ceylon, the island at the southern tip of the Indian peninsula. The island has been mentioned frequently as the logical site for a great air base, dominating traffic across the Indian Ocean between the Arabian Sea and the Bay of Bengal.

The danger to Ceylon is a threat to the world's teacups and to one of the United Nations' last remaining sources of natural rubber. Normally the small island's tea crop stands third on the world scale, second only to that of China and India. It is the second-ranking source of U. S. imports of tea. The island is barely 25,330 square miles in area or about the size of West Virginia.

Colombo Important for Coaling and Tea Export

Capital and business center is Colombo. Because of its geographic position beside the sea lanes between the Far East and Australia on the one hand, and South Africa and the Mediterranean on the other, it is an important coaling station (illustration, next page). In 1938 ships aggregating over 12,000,000 tons stopped there for fuel, or to trade, chiefly for tea.

By sea, Colombo is 1,430 miles from Calcutta, 3,600 from Perth, Australia's chief Indian Ocean port, and about 12,800 from New York via Capetown.

In the crowded native quarter, known as the Pettah, windowless one-story shacks line narrow, crooked streets. Many of its inhabitants wear only loin cloths. Even those fully clothed, like the city's waiters in dress suits, go barefooted.

In contrast is the Fort, the European quarter. Palatial homes, modern shops, and government buildings of Western design line its broad avenues. Automobiles, street cars manned by Orientals, and bullock carts vie for right of way.

Trincomalee a Key Naval Base

Colombo normally has some 300,000 of Ceylon's 6,000,000 people and is thus about the size of Atlanta, Georgia. Kandy, former capital, has only about 40,000. Some 85 per cent of the Ceylonese live in the country.

Eastward 150 miles across the island from Colombo, is Trincomalee, the midway British naval base between Aden and lost Singapore. It is little more than a village, but it has been listed as one of the six greatest natural harbors in the world. Deep and broad, it could shelter the entire British fleet. Trincomalee has a dockyard and naval stations.

Colombo's growth is recent, developing with the tea and rubber trade. In 1867 a blight struck coffee, the island's money crop. Planters tried cacao, quinine, and cardamom (a condiment and drug) with limited success. Then tea was found to flourish on the warm, damp mountain slopes around Kandy. From a planting of ten acres in 1867, the cultivated area jumped to the more than a half-million acres of today.

The average tea estate is of 300 acres, bossed by a European, and worked by Tamil tribesmen from India, thousands of whom are recruited annually.

While tea is Ceylon's most valuable export, rubber plantations cover a greater acreage. Tea thrives on the mountain sides from 2,500 to 7,000 feet. Rubber prefers the foothills up to 2,000 feet. Estimates have given Ceylon, barring invasion, a rubber production of 100,000 tons this year.

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horse, it will bisect the famous Yukon Trail of 1898. Along this path gold hunters struggled by foot and dogsled from the sea through Chilkoot Pass to the Klondike. Today the Skagway-to-Whitehorse railway whisks travelers over a parallel route, through Carcross (illustration, cover).

The road will continue northwest almost within eyeshot of 19,850-foot Mount Logan, lofty and difficult Mount Lucania, and other giants of the St. Elias range.

Terminus of the road is Fairbanks. There trucks from U. S. arsenals will transfer their cargoes. Some goods will go to the Alaska Railroad, running 467 miles south to Seward; others to steamers down the Tanana River and the Yukon to the Bering Sea—America's door to Asia.

As the plane speeds the road surveyor into the wilderness, history calls to mind the Hudson's Bay Company trappers who wearily explored so much of this country before 1850 by canoe and dogsled. To transport supplies into these fastnesses from their London headquarters and return with pelts took seven years.

Note: For further information on the region traversed by the Alaska-Canada highway, see the following articles in the *National Geographic Magazine:* "Family Afoot in Yukon Wilds," May, 1942; "Canada's War Effort," November, 1941; "Peaks and Parks of Western Canada," October, 1941; "Our Air Frontier in Alaska," October, 1940; and "Over the Roof of Our Continent," July, 1938. See also the following GEOGRAPHIC SCHOOL BULLETINS: "Alaska Celebrates 75 Years with Uncle Sam," January 26, 1942; "Canada Makes Close Harmony on Continental Scale," December 1, 1941; and "British Columbia, Storehouse of Canada's Far West," March 6, 1939.

Possible routes of the Alaska-Canada highway show in red on the Society's new Map of North America, which is issued as a supplement to the May, 1942, *Magazine*. A price list of maps may be obtained from the headquarters of the Society in Washington, D. C.

Bulletin No. 1, April 27, 1942.

Amos Burg

FLOATING "HAT RACKS" MARK THE CARIBOU ROUTE TO SUMMER GRAZING

The defense highway will cross the 500-mile-wide route followed by tens of thousands of caribou on their annual summer migration. In June and July, when the snow has melted on Canada's Yukon, whole herds sweep northeastward, accompanied by long-legged caribou calves frisking like playful puppies. They swim the Yukon River's powerful current anywhere from Circle in Alaska south to Selkirk in Canada, plowing up the east bank, where they scramble ashore. They swim with the whole head above water, the antlers upright like hat racks. If in danger, they close their ranks and swim almost touching. Though powerful swimmers, some of them drown. The Indians depend on the animals for meat, smoked and dried. The skin makes warm clothing; Byrd wore a caribou suit on his first flight over the South Pole.

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Peanuts Volunteer for Front-Line Duty

TODAY the war has stripped the U. S. of most of her foreign supply of olive, coconut, and other edible oils—and the peanut, one of the richest sources of edible oil, is being pushed further into front-row importance.

To encourage farmers to increase their peanut acreage, the U. S. Department of Agriculture is supplying seed on credit. The 1,964,000 peanut-producing acres of 1941 may be upped, by Federal request, to 5,000,000 in 1942, and the entire additional crop crushed into oil. This increase is greater than for any other farm product being stepped up by the government to meet new food demands.

In addition to its value as oil, the peanut is one of the most nutritious foods known. It contains all the elements essential to life—proteins, carbohydrates, fats, calcium, phosphorus, iron—and is a rich source of B_1, the vitamin which soothes frayed nerves, builds appetites, and promotes growth. It has a larger quantity of protein than sirloin steak. Half of one small salted peanut will supply the extra calories needed for one full hour of strenuous mental work.

More Than Three Hundred Commercial Products from Peanuts

So the peanut, a frequenter of circuses and ball parks, has come out of its gaily striped bag and volunteered for war service. It will take its place in hospitals and in the dinner pail of the nation. It will help supply the substitutes and the energy needed by both the military and the civilian population.

The war needs are every day placing this versatile nut on a new line of battle and those same peanuts which have been going into peanut butter and peanut brittle will soon take on wartime duties. Fire-fighting foams will be extracted from their shells, wool substitutes made from their protein. There will be powders for soups, flour for bread, oils for cooking and for lubricating machinery, shampoos, cosmetics, gasoline substitutes, and even synthetic rubber. For the peanut is a child of many talents and its commercial uses reach into some 300 products.

The peanut has been claimed as a native by almost every tropical and semi-tropical country in the world, but its birthplace has been established as Brazil. Known as far back as 950 B. C., specimens have been found in prehistoric graves of Peru. American Indians were the first to cultivate the nut for food.

Slaves Brought It Back to America

Early traders and missionaries carried the peanut from Brazil to Africa, and slave traders there, seeking cheap nutritious food for their human cargo, loaded their ships with slaves and peanuts and set out for America. In American soil the nut took root in the South—in the slave quarters of the plantations, ignored, or grown merely as a curiosity. Hungry food-seeking Civil War soldiers are given credit for having rediscovered it. Union soldiers marched home with their pockets full of peanuts and tales of their life-saving qualities.

Approximately half of all peanuts not crushed into oil are used in candy and

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The third export crop is coconut. The coco palms, shading the shore of most of the island, send their oil, meat, and fiber around the world. Drugs, graphite, and spices (notably cinnamon) complete the list of major exports. Another item is citronella, known to many as a fragrant oil used to discourage mosquitoes. Sugar cane and tobacco have made a good start. The rice crop is insufficient for local needs. Pearl fishing is carried on in the Gulf of Mannar, which separates Ceylon from India. The hills have resources of iron ore and hardwood.

Earliest chronicles of Ceylon date from 500 B. C. The Portuguese arrived in 1505. In 1517 they occupied Colombo, naming it in honor of Columbus. The Dutch drove them out around 1650. The British took over in 1796. Kandy, residence of the Singhalese kings from 1592 until the British conquest, retains many of the heritages of Ceylon's Buddhist splendors (illustration, inside cover). Here is enshrined the fabled eyetooth of Buddha—of Paul Bunyan proportions. South of Kandy is Adam's Peak, where a depression in the mountain's face is known as the Footprint of Buddha. There he is said to have stepped off Earth toward Heaven.

Note: Further information on Ceylon may be found in "The Perahera Processions of Ceylon," in the *National Geographic Magazine*, July, 1932.

Ceylon is shown on the National Geographic Society's Map of the Indian Ocean.

Bulletin No. 2, April 27, 1942.

Joseph Ekeland

COLOMBO'S SNAKE CHARMERS MIGHT HAVE STEPPED STRAIGHT FROM KIPLING

For the amusement of the passerby, the snake charmer will stage a performance on the streets of Colombo or on board a ship anchored in the harbor (above). This one has two cobras in their respective baskets and a mongoose, the animal hero called Rikki-Tikki-Tavi in Kipling's *Jungle Book*. But the mongoose is refusing to live up to the reputation for fearlessness that Kipling gave him. Before the aroused cobra (center), doubly frightening because of its expanded hood, the mongoose shies away from a fight.

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Geo-Graphic Brevities

PETROLEUM IS A STAKE IN BURMA

MORE than mere territorial gain has lured Japanese forces to push deep into Burma. This nation is one of the two leading sources of oil in the British Empire, and also serves China as a source of fuel for supply trucks. On both sides of the Irrawaddy River, from Prome north to Mandalay, are oil fields that produce seven to ten million barrels of crude oil a year. Though this is less than one-half of one per cent of the annual world supply, it is enough to rank Burma fifteenth among oil-producing countries. Burma's output in 1940 was about equal to that of Germany and almost triple that of Japan.

There are five large fields north of Prome, at Thayetmo, Minbu, Yenangyaung, Singu, and Yenangyat. Each is equipped with drilling devices that can sink wells to 3,000 feet. At Yenangyaung, on the Irrawaddy's east bank, over 8,000 derricks dot the landscape. The oil flows through pipe lines to refineries near Rangoon.

Burma's crude oil is of high quality. It has been used for more than two centuries. Early shallow wells were dug by hand. Many of these still operate, but large-scale production dates from wells machine-drilled in 1889.

* * * * *

SEVASTOPOL'S BATTLES LAUNCHED FLORENCE NIGHTINGALE

ONE of the first Russian cities bombed after Germany's invasion of the U.S.S.R., Sevastopol has been under constant siege for nearly six months. Its situation on the southern tip of the Crimean Peninsula places it more than 100 miles south of the Black Sea's general northern shoreline—more exposed to attack and better situated to dominate sea lanes. It is the naval base closest to the Dardanelles and the Bosporus, only channel from the Black Sea into world commerce.

The Soviet Union has more than 80 cities larger than Sevastopol, but the naval base, with around 80,000 inhabitants, has considerable historic as well as strategic importance. Florence Nightingale, Catherine the Great, Count Leo Tolstoy the novelist, and the Lord Raglan who gave his name to a still-fashionable cut of sleeves are among the notables who figured in the city's varied history.

In the epic siege of Sevastopol in the Crimean War, the sufferings of British troops under Lord Raglan inspired the historic hospital work of Florence Nightingale, "the lady with the lamp." Tolstoy, whose *War and Peace* ranks among the world's greatest novels, first experienced war at this siege. At near-by Balaklava the "gallant six hundred" rode "into the jaws of death" in the famous "Charge of the Light Brigade" which Tennyson described.

Covering a barrel-shaped peninsula that juts from the Crimea, Sevastopol commands one of the Black Sea's most spacious natural harbors, a sheltered basin four miles long and three-fourths of a mile wide. Once a leading port for Ukrainian grain, in recent years Sevastopol has been predominantly naval, with dockyards, ship-repair basins, a submarine-testing course, and a naval observatory.

Empress Catherine the Great had Sevastopol built on the site of the Tatar city Akhtiar, in 1783. The modern city contains a number of sanatoriums and hotels, a museum of the siege, and a museum dedicated to Tolstoy.

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pastries. About a fourth wind up in peanut butter, a food first manufactured some fifty years ago in St. Louis, Missouri. Salted peanuts account for 12 per cent, although they did not appear on the market until 1887. Eight per cent are sold in the shell at corner stands, circuses, parks, and baseball games. The other 5 per cent go into drugs and medical products. The massaging oil used in after-treatment of infantile paralysis, one of the best tissue builders known, is from peanuts.

Parading across the continents under such names as goober nut, ground nut, monkey nut, and ground pea, the peanut is not a nut at all, but a legume akin to peas and beans. The plant which produces this many-minded offspring has a trait known to very few if any other plants. The female flower, which survives long after the male flower has blossomed and died, sends out long downward-curving shoots or "pegs" to pierce the earth, form, and bury the nut safely in the ground. Thus the plant grows both "up" and "down" simultaneously. Strangely, too, it blossoms, "pegs," leafs, and produces peanuts at the same time.

The peanut thrives best in a sandy loam and in weather that offers rain in early stages and tapers off to a rather dry period. In the U. S. it is not usually grown on the same land oftener than every third or fourth year unless the soil is fed artificially with fertilizer or unless soil-feeding crops are planted in alternate rows along with the peanuts. Although Virginia grew the first peanuts in the U. S., Georgia is the largest-producing State in the Union and Chicago the greatest purchaser of shelled peanuts. As their oil content is much lower than others, the Virginia-Carolina peanuts find their way to market as roasted Jumbos. The Gulf States area grows the small round Spanish variety, which has a much higher oil value. The Runner variety is grown in Georgia and Alabama. These nuts stretch their acreage from Florida to California, and as far north as Washington, D. C.

The fate of a peanut crop depends upon the price of hogs versus the price of peanuts. If the hogs win out, they are turned into the fields to "hog off" the peanuts; if peanut prices are high, the crusher gets the crop for oil.

The U. S., although one of the greatest consumers, so far is not the greatest producer. India takes first place, China second, and the U. S. comes third.

Bulletin No. 3, April 27, 1942.

Hamblin

HORSEPOWER SLAVES HARVEST A CROP THAT SLAVERY BROUGHT TO THE U. S.

In Virginia, where the peanut made its United States debut, the annual goober crop averages third among the output of the twelve chief peanut-growing States, following Georgia and North Carolina. Virginia's Suffolk ranks beside Dawson, Georgia, and Fort Worth in Texas as a regional market for raw peanuts. Some of Virginia's peanut crop is rooted up by hogs preparing themselves to become peanut-fed hams. For harvesting, the whole peanut plant is pulled and fed to this type of mechanical threshing machine. The nuts, collected in the basket (left), are separated from the rest of the plant, which will be useful as hay.

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Waste Paper Goes to War

IT IS now against the law in England to waste paper. Britain is warned that one old envelope will make a cartridge wad, and one cartridge can save a soldier's life. Becoming aware of paper as a war material within six months after the outbreak of hostilities, the British have been conducting a salvage campaign to which even the King has contributed.

A similar Save-the-Paper-that-May-Save-Lives drive is under way in the United States, as two score of the larger cities collect waste paper systematically with the aid of such organizations as the Boy Scouts, Girl Scouts, Red Cross, P. T. A., Boys Clubs, and Campfire Girls. A month after Pearl Harbor the various collection headquarters were getting 50,000 offers of waste paper a week.

The reason for this salvage drive is to recruit "cardboard soldiers"—cartons and boxes that can go into battle zones to help carry soldiers their food, clothing, and ammunition. Waste paper, chopped up, mixed with water, and reduced to a mush, supplies 85 per cent of the paper pulp that makes "paperboard"—the general term covering materials for everything from a light folding box for razor blades to a heavy corrugated container for a refrigerator.

From paperboard too is made the soldier's target-practice board, shaped like the head and shoulders of a man. One pound of waste paper can make about fifteen such cut-out targets for rifle practice.

Big Shells Need Paperboard Cases Weighing 16 Pounds

Made over into heavy roofing paper and covered with asphalt, one pound of waste paper can supply a square yard of roofing for army barracks.

Waste paper must also substitute for the wood pulp hitherto used for paper but now "nitrated," as a substitute for guncotton, to make smokeless gunpowder.

Lend-lease supplies sent to United Nations allies demand mountains of paperboard containers. About 90 per cent of the war materials and foods being sent to Britain travel in waterproof corrugated or fiber boxes. For each tank or airplane sent to battle stations abroad, enough duplicate spare parts are shipped along to build an additional tank or plane—or more; the amount is a military secret, but it is no secret that the parts, paper wrapped, are packed in paperboard boxes.

The alphabet of paperboard users starts off with ammunition, bombs, and cartridges, and goes on through grenades and shells. Containers to pack these explosive supplies constitute the greatest single item in the military demand for waste paper. Hand grenades arrive at the front lines in spirally wound paperboard containers. Rounds of machine-gun bullets have been experimentally packed in paperboard boxes as an improvement over the metal ones of the last war. Small-arms ammunition is packaged in the light material known as chipboard. Medium and large artillery shells have individual paperboard tubes. The cases to hold large 105-mm shells require 16 pounds of paperboard each.

To help deliver these war necessities in good condition, a single pound of waste paper can make 21 boxes for small-arms ammunition, or 3 packages for

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THE WHITE CLIFFS OF DOVER BOMBED AGAIN

SPRING'S renewal of intensive warfare was shown early in German air attacks on Dover. Ironically enough, a granite marker located at much-bombed Dover commemorates the first crossing of the English Channel by an airplane—the feat of Louis Blériot in 1909 in a crude "openwork" monoplane.

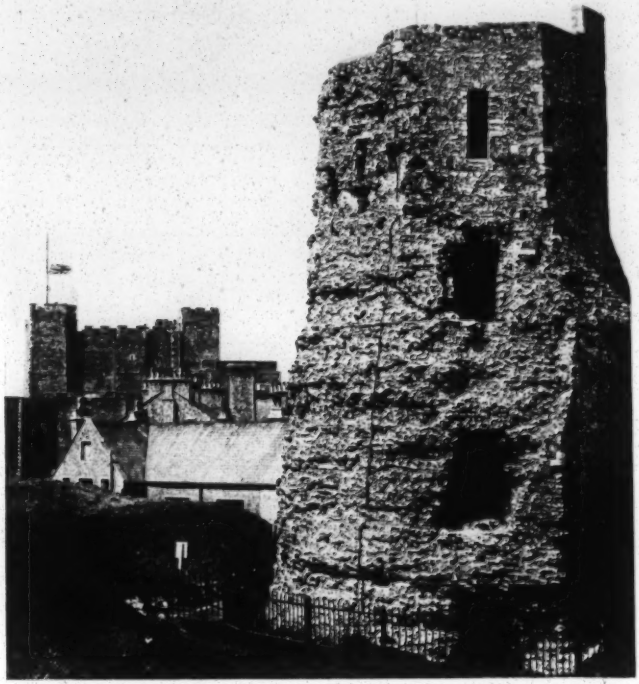
Across the 22-mile narrowest neck of the English Channel from Calais, Dover is the usual gateway to England from the continent. The famous chalk cliffs have welcomed many a homeward-bound Englishman. The cliffs are crowned by a Norman structure, Dover Castle, praised as "the history of England in stone."

Dover, because of its exposed position and its traffic, had 113 "alerts" during the first World War, and was bombed or shelled from Zeppelins, seaplanes, airplanes, destroyers, and submarines. Millions of soldiers passed through.

It was of Dover Beach that Matthew Arnold wrote his famous poem beginning "The sea is calm tonight. . . ." England's history has made a colorful cavalcade through the port—Henry VIII on his way to the Field of the Cloth of Gold, royal suitors for the hand of Elizabeth, Charles II on his return to the throne.

Normally one of the busiest ports of England, Dover has a peacetime population of 40,000 and countless transients. Sleeping-car service by train ferry had been inaugurated in 1936 between Dover and Dunkerque. Dover used to receive much of England's imported butter, eggs, and other food from Europe.

Bulletin No. 4, April 27, 1942.



Ewing Galloway

DOVER SHIPPING BUILT BRITAIN'S OLDEST LIGHTHOUSE

Cross-channel shipping in the days of the Caesars was so great that Roman conquerors of Britain built a pair of lighthouses on the cliffs of Dover, about 460 feet above the sea. Though the companion light has crumbled to ruins, after possibly 19 or 20 centuries, the "Roman Pharos" on Castle Hill still stands, a hexagonal structure 40 feet high. Beyond it appears the younger Norman castle, with four corner towers.

14-mm shells. A ton of paper would provide 47,000 boxes for 30-caliber ammunition, or 3,000 boxes for shells for cannon mounted on aircraft, or 140 cylindrical cases for heavy shells. Or it could make 71,000 dust covers for airplane engines.

Signal flares and rockets now are made with paperboard tubes, somewhat like July 4th skyrockets, to save the aluminum formerly used in their manufacture.

Almost every item the Quartermaster Corps buys for the Army, except the very heaviest, reaches camp in cardboard, from the 20-gallon kettle for the kitchen to mattresses and electric bulbs. The canned tomatoes the Army bought in 1941, for example, took 1,000 tons of boxboard, or 2 million pounds of waste paper.

A warring nation's special paper needs made George Washington's army confiscate an edition of the Bible at Germantown, in 1776, to make cartridges.

Paper making had been started in the Americas just 86 years before, at the Rittenhouse mill near Philadelphia. Since then, the rise of paperboard is possibly the most important development in the industry except the change, around Civil War times, from rags and straw to wood pulp as a basic material.

A generation ago bulk merchandising was the rule; each purchase was measured out from the barrel of sugar or keg of molasses. The unveiling of the paperboard cracker box in the 1890's pushed the cracker barrel into the background and launched modern packaging. Now paperboard is growing more rapidly than any other branch of the industry. In 1914 it was already ahead of wrapping and book paper, just even with newsprint; by 1936 its output was five times greater than newsprint's. In 1941, the 7½ million tons of paperboard amounted to about half of all paper manufactures—120 pounds per capita.

Bulletin No. 5, April 27, 1942.

Clifton Adams

WASTE PAPER BUILDS PULLMAN-CAR CARTONS FOR CHICKS

Fresh from the egg, the baby chick can be lifted from the incubator tray and "packed" in a compartment of the sturdy ventilated paperboard carton used for shipping. The lightweight carton and air transportation make it possible for hatcheries to send chicks to buyers even outside the U. S. This hatchery is in Rockingham County, Virginia. Instead of "chicken on the hoof," however, war needs will require the use of paperboard for lend-lease food sent to United Nations allies, cartons for gun shells and boxes for soldiers' shoes, for example.

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